PATENT
Atty. Docket No. 35512-33

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re Application of:

G. MICHAEL PHILLIPS, ET AL.

Application No.: 09/615,021

Filed: July 13, 2000

For: SENSITIVITY/ELASTICITY-BASED ASSET EVALUATION AND SCREENING

Group Art Unit: 3624

Examiner: Subramanian, Narayanswamy

TRANSMITTAL OF APPEAL BRIEF
(PATENT APPLICATION - 37 C.F.R. § 1.192)

Mail Stop Appeal Briefs - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

Transmitted herewith is the Appeal Brief in the above-referenced patent application, with respect to the Notice of Appeal filed on March 15, 2005.

This Appeal Brief is being submitted on behalf of Assignee, c4cast.com, Inc., a corporation operating as a small entity.

Pursuant to 37 C.F.R. § 1.17(f) enclosed please find a check in the amount of $250.00 to cover the filing fee for the Appeal Brief. If any additional fees are due for the filing or the Appeal Brief, the Commissioner is authorized to charge them to Deposit Account No. 13-3735.

If there are any fees due in connection with the filing of this paper that have not been accounted for in this paper or the accompanying papers, please charge the fees to our Deposit Account No. 13-3735. If an extension of time under 37 C.F.R. 1.136 is required for the filing of this paper and is not accounted for in this paper or the accompanying papers, such an extension is requested and the fee (or any underpayment thereof) should also be charged to our Deposit Account. A duplicate copy of this page is enclosed for that purpose.

Respectfully submitted,

MITCHELL, SILBERBERG & KNUPP LLP

Dated: May 13, 2005

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APPEAL BRIEF
ON APPEAL TO THE BOARD OF PATENT APPEALS AND INTERFERENCES

Mail Stop Appeal Brief - Patent
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

Dear Sir:

Appellants in the above-captioned patent application appeal the final rejection of claims 1-27, 37 and 39 set forth in the Office Action dated November 16, 2004, as amended pursuant to the Advisory Action dated February 15, 2005, a Notice of Appeal and Petition for One-Month Extension Of Time having been timely filed on March 15, 2005.

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I. REAL PARTY IN INTEREST

The real party in interest in this application is c4cast.com, Inc., pursuant to an assignment recorded on July 13, 2000, at reel 010975, frame 0300.

II. RELATED APPEALS, INTERFERENCES AND PROCEEDINGS

An appeal previously was filed in this case on December 15, 2003, with the Appeal Brief subsequently filed on February 17, 2004. Rather than filing an Answer, the Examiner reopened prosecution by issuing an Office Action on May 6, 2004.

III. STATUS OF CLAIMS

Claims 1-27, 37 and 39 have been finally rejected and are the subject matter of this appeal. Claims 28-36 and 40 have been canceled. In accordance with 37 C.F.R. §1.192(c)(9), a copy of the claims involved in this appeal is included in Appendix A attached hereto.

IV. STATUS OF THE AMENDMENTS

An amendment after final rejection was filed on January 19, 2005. In the subsequent Advisory Action dated February 15, 2005, the Examiner stated: (i) that the claim amendments would be entered upon an appeal; and (ii) that Appellants had overcome the previously pending objections and rejections under 35 USC § 112, first paragraph. Accordingly, only the prior-art rejections identified in Section VI below remain pending.

V. SUMMARY OF THE INVENTION

Investors and financial managers generate and analyze a variety of different metrics when making investment decisions. The present invention provides an approach for generating new metrics that often can improve the quality of investment decisions.

Specifically, the present invention creates a model to predict future tendencies of the value of an asset to change based on changes in selected exogenous variables. See, e.g., page 12 line 10 to page 15 line 20 of the Specification. Price sensitivities and price elasticities are examples of such tendencies to change value . See, e.g., page 12, lines 10-15 of the Specification. The predicted values of the asset's tendency to change value can then be used, typically in conjunction with other information, for example, to make appropriate adjustments to a given portfolio. See, e.g., page 15 line 21 to page 17 line 22 of the Specification.

Also, by allowing one to predict, e.g., the future price sensitivity of a particular asset to fluctuations in other measures and variables often can permit better management of, and/or accounting for, specified types of risk (e.g., risk based on interest-rate fluctuations). See, e.g., page 16 line 21 through page 17 line 22.

Independent claims 1, 37 and 39 are summarized as follows. Historical data for the value of an asset is processed together with historical data values for several exogenous variables to obtain a formula for calculating a measure of a tendency of the asset value to change as a result of changes in the data values for the exogenous variables (e.g., a price sensitivity or price elasticity formula), where such formula is a function of such exogenous variables. Projected data values are obtained for the exogenous variables, and a measure of the tendency of the asset value to change based on a change in at least one of the exogenous variables is estimated using the obtained formula and the input projected data values.

An example of this technique is helpful. Assume that it is desirable to know the present or future price sensitivity of a share of Microsoft common stock to any or all of the consumer price index (CPI), the gross national product (GNP) and the national unemployment rate. In accordance with the present invention, past values of the share price for Microsoft stock might be regressed against past data values for each of those three exogenous variables, in order to derive one or more price sensitivity formulas that describe how the price sensitivity of Microsoft common stock to each of the CPI, the GNP and the national unemployment rate vary as a function of those three quantities (or exogenous variables).

Then, projected data values for the CPI, the GNP and the national unemployment rate are obtained. For example, as described in the patent applications incorporated by reference in the present Specification, predictions from numerous individuals may be combined in order to generate forecasted values for each of the three indicated variables at a point in time one month in advance of the current date.

Lastly, these projected data values may be plugged into the price sensitivity formula obtained above in order to estimate the price sensitivity of a share of Microsoft common stock to any or all of the CPI, GNP and the national unemployment rate. The estimated price sensitivities may be deemed valid, for example, at the date that is one month in advance of the current date.

In short, the present invention provides asset evaluation/screening techniques in which different economic scenarios can be specified and then elasticities, sensitivities or similar measures of tendency of the asset value to change based on changes in one or more exogenous variables can be projected under such scenarios. Such data can be used to screen or otherwise evaluate assets.

In a preferred embodiment of the invention, the foregoing technique is incorporated into an asset evaluation/screening tool, allowing users to input various "what if" (i.e., hypothetical) scenarios with respect to any of a variety of macroeconomic, industry-specific, firm-specific or even non-financial data and then obtain projected elasticities, sensitivities or similar measures for selected assets with respect to selected factors based on the input scenario.

VI. GROUNDS OF REJECTION

Claims 1, 2, 6, 7, 14, 37 and 39 stand rejected under 35 USC § 102(b) over U.S. Patent 3,270,310 (Lambert); claims 3-5, 12, 13 and 21 stand rejected under § 103(a) over Lambert in view of U.S. Patent 6,125,355 (Bekaert); claims 8, 9, 15-18 and 22-26 stand rejected under § 103(a) over Lambert in view of a portion of a text titled "Forecasting – Methods and Applications" by Spyros Makridakis et al. (Makridakis); claim 10 stands rejected under § 103(a) over Lambert in view of U.S. Patent 6,405,179 (Rebane); claim 11 stands rejected under § 103(a) over Lambert in view of Rebane and U.S. Patent 6,144,945 (Garg); and claim 27 stands rejected under § 103(a) over Lambert in view of U.S. Patent 6,532,449 (Goertzel).

VII. ARGUMENT

Authority Pertaining to Issues on Appeal

Anticipation Rejections Under 35 USC § 102

The requirements for showing anticipation under § 102 are described in M.P.E.P. § 2131 as follows:

> "A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987).

With respect to a § 102 rejection, the Federal Circuit also has held that "The identical invention must be shown in as complete detail as is contained in the . . . claim." Richardson v. Suzuki Motor Co., 868 F.2d 1226, 1236, 9 U.S.P.Q.2d 1913, 1920, (Fed. Cir. 1989).

In addition, when inherency is asserted extrinsic evidence must cited to show that the missing descriptive matter is necessarily present in the thing described in the reference:

> To establish inherency, the *extrinsic evidence* [emphasis added] "must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill." Continental Can Co. v. Monsanto Co., 948 F.2d 1264, 1268, 20 U.S.P.Q.2d 1746, 1749 (Fed. Cir. 1991). "Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient." *Id.* at 1269, 20 U.S.P.Q.2d at 1749 (quoting In re Oelrich, 666 F.2d 578, 581, 212 U.S.P.Q. 323, 326 (C.C.P.A. 1981)).

In re Robertson, (Fed. Cir. 1999) 169 F.3d 743, 745; 49 U.S.P.Q.2d 1949.

Obviousness Rejections Under 35 USC § 103

The requirements for establishing a prima facie case of a § 103 rejection have been stated as follows.

> "a proper analysis under § 103 requires, inter alia, consideration of two factors: (1) whether the prior art would have suggested to those of ordinary skill in the art that they should make the claimed composition or device, or carry out the claimed process; and (2) whether the prior art would also have revealed that in so making or carrying out, those of ordinary skill would have a reasonable expectation of success. [citing In re Dow Chemical Co., 837 F.2d 469, 473, 5 U.S.P.Q.2D 1529, 1531 (Fed. Cir. 1988).] Both the suggestion and the reasonable expectation of success must be found in the prior art, not in the applicant's disclosure."

In re Vaeck, 947 F.2d 488, 493 (Fed. Cir. 1991).

Thus, MPEP § 2142 requires that in order to establish a prima facie case of obviousness, the Examiner must cite prior art references that teach or suggest all of the claim limitations and, if more than one such reference is required to disclose all such limitations, there must be some

suggestion or motivation, either in the prior art references themselves or in the knowledge generally available to one of ordinary skill in the art, to combine the reference teachings.

As to motivation to combine, MPEP § 2143.01 provides:

> A statement that modifications of the prior art to meet the claimed invention would have been "well within the ordinary skill of the art at the time the claimed invention was made" because the references relied upon teach that all aspects of the claimed invention were individually known in the art is not sufficient to establish a *prima facie* case of obviousness without some objective reason to combine the teachings of the references. Ex parte Levengood, 28 USPQ2d 1300 (Bd. Pat. App. & Inter. 1993). See also In re Kotzab, 217 F.3d 1365, 1371, 55 USPQ2d 1313, 1318 (Fed. Cir. 2000) (Court reversed obviousness rejection involving technologically simple concept because there was no finding as to the principle or specific understanding within the knowledge of a skilled artisan that would have motivated the skilled artisan to make the claimed invention); Al-Site Corp. v. VSI Int'l Inc., 174 F.3d 1308, 50 USPQ2d 1161 (Fed. Cir. 1999) (The level of skill in the art cannot be relied upon to provide the suggestion to combine references.).

Rejection Under § 102(b) Over Lambert

Lambert concerns a securities-evaluating device for predicting the future prices of a common stock. See, e.g., column 1 lines 9-12. Lambert defines the term "future prices" to mean "the most likely high price and low price as a function of the latest available projected earnings, dividends, asset value per share, sales and trading volume, etc."

More specifically, Lambert describes a computing device for obtaining a simple linear pricing model ($P = AV_1 + BV_2 + CV_3 + DV_4 + EV_5 + K$) and then using that model to predict an expected high price and low price for a desired stock. See, e.g., column 1 lines 29-46 and column 6 lines 45-58. In order to create Lambert's model, historical values for the following five variables pertaining to the stock are input: earnings per share, dividends per share, annual sales of the company, asset value per share and the stock's trading volumes. See, e.g., column 3 line 40 through column 4 line 35.

Then, historical values for the price per share are input (column 2 lines 51-56 and column 4 lines 36-42), and knobs are adjusted to minimize voltmeter readings or, alternatively, in an attempt to visually match the predicted share prices over a 10-year historical period to the actual historical share prices over the same period, with the time series for both price sequences simultaneously displayed on an oscilloscope. See, e.g., column 4 line 45 through column 5 line 62. The adjustment of such knobs implicitly identifies the coefficient of the linear pricing model mentioned above.

Claims 1, 37 and 39

Independent claims 1, 37 and 39 are directed to systems and techniques for evaluating an asset. Initially, historical data for the value of the asset and historical data values for plural exogenous variables are processed to obtain a formula for calculating a measure of a tendency of the value of the asset to change as a result of changes in the data values for the exogenous variables, the formula being a function of the exogenous variables. Also, projected data values for the exogenous variables are obtained. Then, a measure of the tendency of the value of the asset to change based on a change in at least one of the exogenous variables is estimated using the obtained formula and the projected data values.

The foregoing combination of features is not disclosed by the applied art. In particular, Lambert does not disclose at least the feature of estimating a measure of the tendency of the value of an asset to change as a result of changes in the data values for certain exogenous variables, using an obtained formula and projected data values for the exogenous variables, where the formula has been obtained based on historical data for the value of an asset and historical data values for the exogenous variables.

First, Lambert says nothing at all about obtaining any type of formula for calculating a measure of a tendency of an asset's value to change as a result of changes in data values for certain exogenous variables. Only a single argument has been presented for asserting that Lambert discloses this feature of the invention. Specifically, the Examiner previously has asserted only that Lambert determines a measure of tendency to change value as an intermediate step in arriving at the pricing formula set forth in column 1 line 32 of Lambert's disclosure.

In response to this interpretation of Lambert, Appellants have pointed out that the portion of Lambert cited by the Examiner merely discusses the generation of a price estimate by using a simple weighted combination of certain variables. The weighting coefficients used in Lambert are *constant values* that have been obtained in a manner designed to minimize some indication of overall error.

Thus, even if Lambert's weighting coefficients are seen as measures of the tendency of an asset value to change, such measures are *constant values*. Lambert does not disclose, in any manner whatsoever, a *formula* for calculating a measure of the tendency of an asset value to change as a result of changes in the data values for exogenous variables, *where the formula itself is a function of the exogenous variables.*

Similarly, Lambert does not say anything at all about *using* such a formula, *together with projected data values for the exogenous variables,* to estimate a measure of the tendency of the asset value to change based on a change in at least one of the exogenous variables. In fact, even under the Examiner's interpretation, Lambert's "tendencies to change" are simply *constant values* (i.e., the constant coefficients of his pricing formula) that are determined based on certain historical data. As a result, Lambert could not possibly have disclosed the feature of determining

a measure of tendency to change value with the use of a formula and projected data values for exogenous variables.

In short, Lambert fails to disclose at least the features of: (i) obtaining a formula for calculating a measure of the tendency of the value of an asset to change as a result of changes in the data values for certain exogenous variables, where the formula itself is a function of such exogenous variables; and (ii) using the formula and projected data values for the exogenous variables in order to estimate a measure of the tendency of the value of the asset to change based on a change in at least one of the exogenous variables.

Lacking these features of the invention, Lambert could not possibly have anticipated any of claims 1, 37 or 39. That is, absent any disclosure of such features, Lambert clearly does not meet the criteria for an anticipation rejection, as set forth in the authority cited above.

Accordingly, independent claims 1, 37 and 39, together with claim 1's dependent claims 2-6, 13-16, 19, 20 and 23-27, are believed to be allowable over the applied art.

Claim 7

Claim 7 depends from claim 1 and recites the further limitation that obtaining the formula for calculating the measure of the tendency of the asset's value to change as a result of changes in the data values for the exogenous variables comprises calculating a price formula that describes the value of the asset as a function of said exogenous variables and then estimating a derivative of such price formula to obtain the desired formula. This additional feature of the invention is not disclosed by Lambert.

In fact, no specific grounds for asserting that Lambert discloses this feature of the invention have been advanced. However, Appellants have studied Lambert in detail and are

unable to find anything about estimating any derivative whatsoever, much less a derivative of a price formula according to the present invention.

For these additional reasons, claim 7, together with its dependent claims 8-12, is believed to be allowable over the applied art.

Claim 14

Claim 14 depends from claim 1 and recites the further limitation of repeating the input of projected data values for the exogenous variables and the estimating of the measure of the tendency of the asset's value to change based on a change in at least one of the exogenous variables, using different projected data values for the exogenous variables. This additional feature of the invention is not disclosed by Lambert.

In fact, no specific grounds for asserting that Lambert discloses this feature of the invention have been advanced. However, Appellants have studied Lambert in detail and are unable to find anything about changing the projected data values for the exogenous variables and the re-estimating the measure of the tendency of the asset's value to change based on a change in at least one of the exogenous variables. Moreover, such repeated re-estimation with different projected data values would be futile under the Examiner's interpretation (discussed above in connection with claim 1), as the asserted measures of the tendency of the asset's value to change (under the Examiner's interpretation) are constants.

For these additional reasons, claim 14 is believed to be allowable over the applied art.

Rejection Under § 103(a) Over Lambert in view of Bekaert

Claim 21

Claim 21 depends from claim 1 and recites the further limitation of repeating the process for plural different assets and selecting a subset of such plural different assets based on the

measure estimated for each of such plural different assets. This additional feature, of essentially screening different assets based on the measures estimated in accordance with the inventive technique, is not disclosed or suggested by the applied art.

With regard to this feature of the invention, the Examiner only cites column 4 lines 17-23 of Bekaert. However, that portion of Bekaert merely notes that a "parameter module" provides inputs to Bekaert's pricing module, and that a "simulation module" receives outputs from the pricing module and provides inputs to a "portfolio optimization module that determines one or more optimal portfolios." Nothing in Bekaert indicates that any of such optimal portfolios is based, in any manner whatsoever, upon any estimated measure of the tendency of an asset's value to change based on a change in an exogenous variable. Accordingly, this portion of Bekaert could not possibly have disclosed or suggested the above-referenced screening technique of the present invention.

The Examiner further asserts the "the step of selecting a subset and steps of repeating [steps] (a) through (c) [in claim 1] for plural different assets are inherent in the method of Bekaert." However, no extrinsic evidence has been cited to show that any such step necessarily is present in Bekaert, as is required under the holding of In re Robertson, supra.

To the contrary, the Examiner has not even asserted, or provided in the grounds for implying, that Bekaert discloses or suggests any of steps (a) through (c) in claim 1. Accordingly, it is unclear how the repetition of such steps could have been inherent in Bekaert.

For these additional reasons, claim 21, together with its dependent claim 22, is believed to be allowable over the applied art.

Rejection Under § 103(a) Over Lambert in view of Makridakis

<u>Claim 17</u>

Claim 17 depends from claim 1 and recites the further limitation of determining whether the obtained formula is capable of estimating the measure of the tendency of the asset's value to change based on a change in said at least one of the exogenous variables with sufficient reliability. This additional feature of the invention is not disclosed or suggested by the applied art.

With respect to it, the Examiner simply asserts that pages 211-227 of Makridakis "teaches the step of determining the reliability of the estimated model." It is correct that this portion of Makridakis discusses how to determine the significance of certain relationships that have been identified using a regression analysis. However, applying such teachings to Lambert's disclosure still would not have resulted in the present invention.

The only regression analysis apparently performed in Lambert's disclosure is for determining the coefficients in his pricing model. Accordingly, Makridakis at most have suggested a way to evaluate the quality of Lambert's linear *pricing* model.

As noted above in connection with the discussion of claim 1, Lambert does not even generate a formula for estimating the measure of the tendency of the asset's value to change based on a change in an exogenous variable. Accordingly, no generic teaching regarding how to determine the reliability of a regression model would have motivated one of ordinary skill in the art to modify Lambert's disclosure in order to determine whether such a formula is capable of estimating the measure of the tendency of the asset's value to change with sufficient reliability.

For these additional reasons, claim 17, together with its dependent claim 18, is believed to be allowable over the applied art.

VIII. CONCLUDING REMARKS

As Appellants have shown above, for a number of reasons, nothing in the cited references discloses, teaches, or suggests the invention recited by the claims on appeal. Appellants therefore respectfully submit that the claimed invention is patentably distinct over the applied art.

In view of the foregoing remarks, Appellants respectfully request that the rejection of claims 1-27, 37 and 39 be reversed and a Notice of Allowance issued.

Respectfully submitted,

MITCHELL, SILBERBERG & KNUPP LLP

Dated: May 13, 2005   By   /Joseph G. Swan/_____
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APPENDIX A

Claims on Appeal

1.   A method for evaluating an asset, said method comprising:

using at least one computer to:

(a) process historical data for value of an asset and historical data values for plural exogenous variables to obtain a formula for calculating a measure of a tendency of the value of the asset to change as a result of changes in the data values for the exogenous variables, wherein said formula is a function of the exogenous variables;

(b) input projected data values for the exogenous variables; and

(c) estimate a measure of the tendency of the value of the asset to change based on a change in at least one of the exogenous variables using the formula obtained in step (a) and the projected data values input in step (b),

wherein the asset can be purchased by an owner.

2.   A method according to Claim 1, wherein said asset comprises a share of stock in a corporation.

3.   A method according to Claim 1, wherein said asset comprises a portfolio of shares of stock in plural different corporations.

4.   A method according to Claim 1, wherein said asset comprises an index.

5.   A method according to Claim 1, wherein said asset comprises a mutual fund.

6.   A method according to Claim 1, wherein the value of said asset comprises a market price for said asset.

7.   A method according to Claim 1, wherein step (a) comprises calculating a price formula that describes the value of said asset as a function of said exogenous variables and then estimating a derivative of said price formula to obtain said formula.

8. A method according to Claim 7, wherein said price formula is obtained by performing a non-linear regression using said historical data for the value of the asset and said historical data values for the plural exogenous variables.

9. A method according to Claim 7, wherein said price formula is obtained by performing neural network processing using said historical data for the value of the asset and said historical data values for the plural exogenous variables.

10. A method according to Claim 7, wherein said price formula is in a format of a truncated Taylor series expansion.

11. A method according to Claim 10, wherein said price formula is in a format of a truncated Maclaurin series expansion.

12. A method according to Claim 7, wherein said price formula describes a logarithm of the value of said asset as a function of logarithms of said exogenous variables.

13. A method according to Claim 1, wherein step (b) comprises obtaining current values for said exogenous variables and allowing a user to alter plural of said current values to produce a "what if" scenario, and wherein data values for said "what if" scenario are used as said projected data values for the exogenous variables.

14. A method according to Claim 1, further comprising a step of repeating steps (b) and (c) using different projected data values for the exogenous variables.

15. A method according to Claim 1, wherein said tendency of the value of the asset to change based on the change in said at least one of the exogenous variables is a measure of elasticity of the value of the asset to said at least one of the exogenous variables.

16. A method according to Claim 1, wherein said tendency of the value of the asset to change based on the change in said at least one of the exogenous variables is a measure of sensitivity of the value of the asset to said at least one of the exogenous variables.

17. A method according to Claim 1, further comprising a step of:

(d) determining whether said formula is capable of estimating said measure of the tendency of the value of the asset to change based on a change in said at least one of the exogenous variables with sufficient reliability.

18. A method according to Claim 17, wherein step (d) comprises performing Student's t-test.

19. A method according to Claim 1, further comprising a step of initiating at least one of a purchase of said asset and a sale of said asset based on the estimate made in step (c).

20. A method according to Claim 1, further comprising a step of initiating at least one of a purchase of an other asset and a sale of said other asset based on the estimate made in step (c).

21. A method according to Claim 1, further comprising steps of:

(d) repeating steps (a) through (c) for plural different assets; and

(e) selecting a subset of said plural different assets based on the measure estimated for each of said plural different assets in step (c).

22. A method according to Claim 21, further comprising a step of:

(f) determining whether the formula for each of said plural different assets is capable of estimating the measure for said each of said plural different assets in step (c) with sufficient reliability, and

wherein the subset of each of said plural different assets is selected in step (e) based on the determinations made in step (f).

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23.   A method according to Claim 1, wherein said formula is obtained by performing a non-linear regression using said historical data for the value of the asset and said historical data values for the plural exogenous variables.

24.   A method according to Claim 1, wherein said formula is obtained by performing neural network processing using said historical data for the value of the asset and said historical data values for the plural exogenous variables.

25.   A method according to Claim 24, wherein said formula is based on a price formula that describes the value of said asset as a function of said exogenous variables.

26.   A method according to Claim 25, wherein said measure of tendency to change is calculated by inputting different data values for the exogenous variables and observing how an output of said price formula changes as a result of small changes in the data values for the exogenous variables.

27.   A method according to Claim 1, wherein said formula is obtained by using a genetic algorithm.

28.   (Canceled)

29.   (Canceled)

30.   (Canceled)

31.   (Canceled)

32.   (Canceled)

33.   (Canceled)

34.   (Canceled)

35.   (Canceled)

36.   (Canceled)

37.   An apparatus for evaluating an asset, said apparatus comprising:

(a) means for processing historical data for value of an asset and historical data values for plural exogenous variables to obtain a formula for calculating a measure of a tendency of the value of the asset to change as a result of changes in the data values for the exogenous variables, wherein said formula is a function of the exogenous variables;

(b) means for obtaining projected data values for the exogenous variables; and

(c) means for estimating a measure of the tendency of the value of the asset to change based on a change in at least one of the exogenous variables using the formula obtained by said means (a) and the projected data values obtained by said means (b),

wherein the asset can be purchased by an owner.

38.   (Canceled)

39.   A computer-readable medium storing computer-executable process steps for evaluating an asset, said process steps comprising steps to:

(a) process historical data for value of an asset and historical data values for plural exogenous variables to obtain a formula for calculating a measure of a tendency of the value of the asset to change as a result of changes in the data values for the exogenous variables, wherein said formula is a function of the exogenous variables;

(b) obtain projected data values for the exogenous variables; and

(c) estimate a measure of the tendency of the value of the asset to change based on a change in at least one of the exogenous variables using the formula obtained in step (a) and the projected data values obtained in step (b),

wherein the asset can be purchased by an owner.

40.   (Canceled)